

**REMARKS**

In the Office Action mailed on June 17, 2003, the Examiner rejected claims 1, 4, 6, 12, 15, 18, 20, 26, and 27 under 35 U.S.C. §102(e) as anticipated by Lustig et al.; claims 3, 7-11, 17, and 21 under 35 U.S.C. §103(a) over Lustig et al.; claims 5 and 19 under §103(a) over Lustig et al. in view of Chu et al.; and claims 22-25 under §103(a) over Lustig et al. in view of Kant.

In making his rejections over Lustig et al., the Examiner argues that Lustig's "step of reducing a monocrystalline layer, which is positioned between the strained surface layer 5 and the Si substrate 1, to a 'desired thickness' or uniform thickness ... equates to a flattened, smoothed or planarized top surface for the monocrystalline layer."

We have amended the claims to specify that both the smoothed surface and the overlying strained layer both lack surface roughness to a recited degree. Support for the amendment may be found at least on page 9, lines 6-9.

While Lustig's silence concerning surface roughness may be *consistent* with "a flattened, smoothed or planarized top surface," as the Examiner contends, there is nothing in Lustig that *requires* a smooth surface — and certainly not a surface smoothed to less than 1 nm. Indeed, there would be no motivation for Lustig et al. to achieve such a small degree of surface roughness, since one of skill in the art would, at the time, have

expected the benefits of smoothness to be lost in the overlying lattice-mismatched layer with the emergence of the characteristic, dislocation-induced roughness.

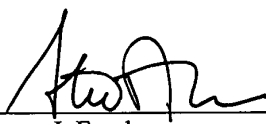
The present inventors, however, have found that smoothness imparted to an intermediate layer persists, surprisingly, in an overlying lattice-mismatched layer. It is important to stress that critical to the invention is not merely the concept of smoothing, but retaining the benefits of smoothness — i.e., the absence of surface roughness — in an overlying strained layer. We submit that the no art of record suggests avoiding surface roughness at all between lattice-mismatched layers, much less to the degree specified in the amended claims.

We therefore submit that all claims are now in condition for allowance. Please charge any fee occasioned by this paper to our Deposit Account No. 20-0531.

Respectfully submitted,

Date: September 17, 2003  
Reg. No. 33,497

Tel. No.: (617) 310-8108  
Fax No.: (617) 248-7100

  
\_\_\_\_\_  
Steven J. Frank  
Attorney for Applicant(s)  
Testa, Hurwitz, & Thibault, LLP  
High Street Tower  
125 High Street  
Boston, Massachusetts 02110